COMP 115 Robots, Games, and Problem Solving

Lab #6

In this lab, you will write programs to practice the use of simple loops.

1. Write a program that asks the user for a positive integer n, and then displays on screen all the integers between 0 and n (inclusively) that are neither divisible by 2 nor 3 but that *are* divisible by 5.

2. Modify the program above to take a second integer *start* from the user, and then displays on screen all the integers between *start* and $start + n$ that are neither divisible by 2 nor 3, but that *are* divisible by 5.

   _____ Show me the result when you are done.

3. Write a program that asks the user to enter even numbers and sums them up. When the user enters an odd number, the number should not be added to the sum and an error message should be displayed. The program should keep asking the user for new numbers until the user enters the word `"DONE"`.

4. Write a new program that is similar to the program above, but that instead keeps asking the user for new numbers until the user entered five *even* numbers.

   _____ Show me the result when you are done.

5. The greatest common divisor (GCD) of two values can be computed using Euclid's algorithm. Starting with the values n and m where $n \geq m$, we repeatedly apply the formula $next = n\%m$, then the next value of n is m, the next value of m is $next$. Keep doing this until m is zero. At that point, n is the GCD of the original n and m.
   Write a program that asks the user for two (positive) integers and calculates and prints the GCD of these two numbers.

6. Since the GCD of n and m is the same if n and m are positive or negative, modify the algorithm above so that if one of the two inputs is negative, then the corresponding positive number is taken instead. For example, if the user enters 35 and -77, then the program should do the same thing as if the user had entered 35 and 77.

   _____ Show me the result when you are done.

When you are done, write your name on the sheet and hand it to the lab instructor.

Name: _____